Case Study

Epidemiology of Hypertension in Albania, a Cross-Sectional Study

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Abstract

This paper aims to obtain information on the epidemiological situation of arterial hypertension and specifically the prevalence and risk factors of this health condition in the adult population of the city of Durrës, in order to take measures for the most effective and timely treatment, especially in preventing the development of arterial hypertension in this very important city of Albania. According to studies and reports, the prevalence of hypertension in Albania has been steadily increasing over the past decade. A study conducted in 2020 reported a hypertension prevalence rate of 32.8% among adults aged 18 years and above in Albania. Another study in 2018 found that the prevalence of hypertension was higher in urban areas compared to rural areas, with rates of 37.1% and 30.6%, respectively. Risk factors for hypertension in Albania include unhealthy diet, physical inactivity, obesity, and genetic factors. Similarly, the prevalence of diabetes in Albania has also been on the rise. The increasing prevalence of hypertension in Albania has significant public health implications, including increased healthcare costs, morbidity, and mortality. Efforts to prevent and control hypertension should focus on health promotion and prevention strategies, including lifestyle interventions, early detection, and management of risk factors. In conclusion, the prevalence of hypertension in Albania is increasing and modifiable risk factors such as unhealthy diet, physical inactivity, obesity, and genetic factors contribute to this increase. Effective public health strategies focusing on prevention, early detection, and management of risk factors are essential for addressing the growing prevalence of hypertension in Albania.

Keywords: Hypertension, Albania, Risk factors, Prevention, Public health

Introduction

Prevalence of Hypertension in Albania

Hypertension is a significant public health issue in Albania, with a high prevalence rate among adults. Several studies have been conducted to determine the prevalence of hypertension in Albania, and the findings indicate that it is a growing health concern [1, 2].

A study published in 2020 by Kocollari *et al*. assessed the prevalence of hypertension among adults aged 18 years and above in Albania. The study used data from the Albanian STEPS survey, which is part of the World Health Organization's STEP-wise approach to Surveillance (STEPS) program. The survey was conducted in 2018 and included a nationally representative sample of 10,262 adults.

The findings of the study revealed that the prevalence of hypertension in Albania was 32.8%. This indicates that nearly one-third of the adult population in Albania has hypertension. The study also found that hypertension was more prevalent among men (34.5%) compared to women (31.1%). The prevalence of hypertension increased with age, with the highest rates observed in adults aged 65 years and above (74.1%).

Furthermore, the study also reported that the prevalence of hypertension was higher in urban areas (37.1%) compared to rural areas (30.6%). This urban-rural disparity could be attributed to differences in lifestyle factors, such as diet, physical activity, and stress levels, as well as access to healthcare services.

Risk factors for hypertension in Albania include unhealthy diet, physical inactivity, obesity, and genetic factors. Albanian cuisine is known for its high consumption of salt, which can contribute to elevated blood pressure levels. Physical inactivity and sedentary behavior are also prevalent among Albanian adults, which can increase the risk of

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hypertension [3]. Furthermore, obesity, which is associated with an unhealthy diet and low physical activity levels, has been on the rise in Albania, contributing to the increasing prevalence of hypertension.

From a transversal (cross-sectional) study conducted in Tirana in 2001 in a representative sample of 1120 men and women over the age of 25, it was found that the prevalence of arterial hypertension was 37% in men and 27% in women. In 2006, from a study conducted in the population of Tirana, with a sample of 3702 individuals randomly selected during one day, it was found that the prevalence of HTA in this population was 22.5% and that this prevalence increased with age of age. On the other hand, according to a study undertaken by Burazeri G. and bp. in 2007, the prevalence of arterial hypertension in a representative sample of the adult population of the city of Tirana was 15% in men and 19% in women [2, 3]. During the year 2008-2009, the Albanian Demographic and Health Survey (ADHS) was undertaken in Albania, which presented a complete situation of the prevalence of arterial hypertension in Albania and its risk factors. According to the ADHS, one in five women (20%) were classified as having hypertension - 15% were classified as stage I with mildly elevated blood pressure, 3% were stage II with moderately elevated blood pressure, and 1% were of phase III with a very high level. Also, 1% of women had normal blood pressure but were taking medication against arterial hypertension and, therefore, were classified as having arterial hypertension. In men, 28% were classified with arterial hypertension - 24% of them were in the first stage of hypertension and 4% were in the second stage. Less than 1% of the men had normal blood pressure but were on antihypertensive medication [4].

A comparison of hypertension rates by gender revealed a slight difference between women (20%) and men (28%), with men more likely to develop mild forms of hypertension compared to women (24% and 15%, respectively). Furthermore, there were even greater differences between women and men in the three categories of optimal, normal, and high-normal blood pressure. 20% of women had optimal blood pressure levels compared to only 5% of men, 33% of women were in the normal range compared to 28% of men, and 27% of women were in the high normal range compared to 39% of men. Epidemiological studies have shown that arterial hypertension is directly proportional to age, a finding also confirmed by ADHS 2008-09. 40% of women and 45% of men aged 45-49 suffered from hypertension, suggesting that hypertension is a serious health problem among older age groups in Albania. For women, the levels of arterial hypertension increase with age from 6% among women aged 15-19 to 40% among those aged 45-49%, while for men, levels quadruple from 11% among men aged 15-19 years old to 45% among those aged 45-49. Among both women and men, the prevalence of arterial hypertension was significantly higher among those who were currently married or cohabiting (25% of women and 36% of men) than among respondents who had never married (8 % of women and 17% of men). However, this finding should be interpreted with caution because the association between arterial hypertension and marital status was not controlled for age, a variable which (as mentioned above) is directly proportional to age.

In men, arterial hypertension was positively associated with smoking status; thus, the prevalence of hypertension was higher in male smokers than in non-smokers (34% and 23%, respectively). In women, the prevalence of arterial hypertension in the relatively small number of non-smokers was slightly higher than in smokers (20% and 17%, respectively). However, it should be noted that most female smokers are younger women who generally have a lower risk of arterial hypertension. As expected, levels of arterial hypertension were higher among overweight/obese respondents compared to those of normal weight. Almost half of the obese women (47%) had arterial hypertension compared to 8% of women of normal weight. The same pattern was present in men: the level of arterial hypertension in obese men was 45% compared to 20% of men of normal weight. Women and men living in rural areas (24% and 31%, respectively) were more likely to have arterial hypertension than those living in urban areas (16% and 24%, respectively). Women and men living in urban Tirana had a much lower prevalence of arterial hypertension (5% and 8%, respectively) compared to women and men living in other regions (more than 20% of women and men). According to ADHS in Albania, there is a clear inverse (negative) relationship between education and the prevalence of arterial hypertension in both women and men. Women and men with 8 years of primary education (24% and 32%, respectively) were more likely to have arterial hypertension than women and men with university education or higher (7% and 19%, respectively). An increase in the economic level is also associated with a decrease in the prevalence of arterial hypertension in men and women. Women and men from the lowest wealth quintile (20%) (26% and 33%, respectively) are more likely to have hypertension compared to women and men from the highest wealth quintile (12% and 20 %, respectively).

The purpose of the paper is to obtain information on the epidemiological situation of arterial hypertension and specifically the prevalence and risk factors of this health condition in the adult population of the city of Durrës, in order to take measures for the most effective and timely treatment, but especially in preventing the development of arterial hypertension in this very important city of Albania.

Materials and Methods

Population

In this study, a representative sample of the adult population of the city of Durrës between the ages of 18 and 80 was included. For taking the sample, the list of the last census of the population according to the data of [5, 6] for residents in

the city of Durrës was used. From this list (sampling frame) which includes all administrative units of the Municipality of Durrës, a simple random sample of 870 subjects was taken for study. All individuals were interviewed in the respective health centers. The sample size was based on various calculations obtained from the program WINPEPI (Program for Epidemiologists, Windows version). To calculate the sample size, a prevalence of arterial hypertension of 50% (a conservative assumption that tends to maximize the sample size), a confidence interval of 95%, and a margin of error of 5% was first assumed. Based on these conservative assumptions, the sample size needed for the study results is 384 individuals. Further, a positive association (association) of smoking with arterial hypertension was assumed. Smoking individuals were considered to be 30% more likely to have arterial hypertension compared to normotensive individuals. Also, a 5% error in the expected difference between the two groups was assumed. Based on these assumptions, the sample size needed for the study results in 769 individuals. However, it was decided to include 100 additional subjects in the sample to increase the study power. Therefore, from the population census lists of the Municipality of Durres, a sample of 870 individuals between the ages of 18 and 80 was taken. Random sampling guarantees the reliability and validity of the study results.

Inclusion Criteria

Data collection consisted of the administration of a structured questionnaire as well as a physical examination.

The questionnaire included the following components:

- Demographic characteristics (gender, age, ethnicity, religious belief);
- Socio-economic factors (economic level, education, employment status);
- The economic level was relatively evaluated based on the average monthly income per capita in Albania. Based on this, the participants were classified into three groups: with lower income, almost the same, and greater.
- Education was assessed based on the years of schooling declared by the interviewee himself.
- Employment status was categorized as unemployed, employed, and retired.
- Factors related to style or lifestyle
- Smoking was assessed by subjects' reporting of current and/or past smoking history.
- Alcohol consumption - questions for this section focused on the frequency and amount of alcohol consumption. The amount of alcohol consumed was calculated based on the units of alcoholic beverages consumed per day. One unit was considered 50 ml of strong drinks with an alcohol concentration of 40% (a single shot) or 500 ml of 4.5% beer (a pint) or 200 ml of 11.5% wine (a glass). Knowing the density of ethanol (0.79 kg/L), one unit contains 18g of ethanol.
- Physical activity - for its evaluation, each participant in the study was asked about the time he spends on average in the development of concrete activities performed at work, in his free time, and at home.
- Nutrition was assessed according to the subjects' reporting regarding the consumption of fats, pastries, fruits, vegetables, and the amount of salt used in the daily diet. The assessment was made taking into account the frequency and amount used per day.
- Use of preparations that increase arterial pressure: all subjects were asked if they used non-steroidal anti-inflammatory preparations, steroids, oral contraceptives, and naphazoline.
- Existing diseases: all subjects were asked about existing syndromes or diseases that are related to the development of arterial hypertension or its complications.
- Family history included information related to the history of HTA or its main complications in the family (mother, father, sister, brother, grandfather, grandmother, aunt, uncle, uncle).
- The physical examination consisted of assessing weight, height, and waist circumference. Body mass index (BMI) was calculated as the ratio of weight (in kg) to height (m2).

Exclusion Criteria

- Persons younger than 18 years old and older than 80 years old.

Clinical Examination

Measurement of Arterial Pressure

During the administration of the questionnaire, arterial pressure measurements were also performed. These measurements were intended to provide a cross-sectional estimate of the prevalence of high blood pressure results in the population of the city of Durrës and were not intended to perform a medical diagnosis of the disease. The results are seen only as a statistical description of the studied population but are useful to have information on the size and characteristics of the population at risk of hypertension in this city. Arterial pressure was measured with a mercury sphygmomanometer (with a cuff for individuals with normal and large arms). During the study interview, three measurements of systolic and diastolic blood pressure (measured in millimeters of mercury, mmHg) were taken, at approximately 5-minute intervals between measurements. The averages of the second and third measurements were used to classify individuals with regard to hypertension, following the internationally recommended categories. Individuals were classified as having hypertension if their systolic blood pressure exceeded 140 mmHg or if their diastolic blood pressure exceeded 90 mmHg. Elevated blood pressure was classified as mild, moderate, or severe according to the cutoff points recommended by the National Institutes of Health (1997), as you can see from the **Table 1** below.

Table 1. Classification of hypertension according to National Institute of Health (1997)

Hypertension	Systolic	Diastolic
Stage 1, Slightly raised	140-159	90-99
Stage 2, Moderate elevated	160-179	100-109
Stage 3, Very elevated	> 180	>110

When systolic and diastolic blood pressures fell into different categories, the highest category was used. Respondents whose systolic and diastolic measurements were greater than or equal to 140/90 were considered hypertensive.

Results and Discussion

870 individuals participated in the study, where women (51.5%) had an average age of 46.7 ± 2.3 years, while men (48.1%) had an average age of 47.9 ± 2.1 years; By race, 96.3% of individuals interviewed were white and 3.5% individuals were black. - Education was assessed based on the education individuals had: low (8 years), medium (8-12 years), and high (>12 years).

In our study, the majority of the interviewees were those with secondary education (9-12 years), who constituted 44.7% of the entire population, followed by those with eight years of education (36.3%). Subjects with higher education constituted 19% of the entire population under study. - Regarding the religious faith of the interviewees, 600 (69%) of them belonged to the Muslim religion against 270 (31%) to the Christian religion.

According to civil status, 581 (66.8%) of the interviewees were married and 289 (33.2%) of them were single/divorced/widowed.

The economic level of the individuals included in the study was relatively evaluated based on the average monthly income per capita in Albania, which in 2002 was $115 (12,500 ALL). Based on this, the participants were classified into three groups: with lower income, the same, and higher than the average income in Albania. Individuals with a lower economic level than the Albanian average in our study occupy the smallest place, 13.1%. This result is slightly lower than INSTAT data, according to which in 2005, 16.6% of the Albanian population had a low economic level. In more detail, in our study 114 (13.1%) of the individuals reported that their economic level was lower than the average in Albania, 285 (32.8%) reported that this level was the same as the average in Albania and 471 (54.1%) reported a higher economic level than the average in Albania.

According to the employment status of the subjects included in the study, 150 (17%) were students, 182 (21%) were unemployed, 418 (48%) were employed and 120 (14%) were retired.

According to our study, the prevalence of HTA (during arterial pressure measurement) in the city of Durrës was 23.4%. While the prevalence of HTA according to the self-report of the interviewed subjects was 21.2%.

Of the 184 subjects (21.2%) who self-reported HTA, only 113 (61.4%) of them stated that they were currently taking medication to normalize HTA.

Of the 113 subjects who self-reported HTA medication, 38 (33.6%) of them stated that they were taking only one type of medication, 52 (46%) of them were taking two types of medication, and 23 (20.4%) of them were taking more than 2 medications for the treatment of HTA.

The prevalence of HTA according to both genders was 27.3% for men and 19.9% for women. The prevalence of HTA according to the type of pressure (systolic and diastolic) was as follows: High systolic pressure: the prevalence of this condition was found to be 19.1% in men and 13.2% in women; High diastolic pressure: the prevalence of this condition was found to be 10.7% in men and 8.3% in women.

Regarding the style/lifestyle factors that influence the occurrence of HTA, it was found that 240 (27.5%) of the interviewees were smokers against 630 (72.5%) who were non-smokers. Regarding the male/female ratio, 123 (29%) male interviewees were smokers, compared to 117 (26%) female smokers. Regarding alcohol consumption, 223 (25.6%) of the interviewees did not consume alcohol at all, 247 (28.4%) consumed it occasionally, 89 (10.2%) consumed it 1-2 times a month, 114 (13.1%) consumed it 1-2 times a week, 138 (15.9%) consumed alcohol almost every day and 59 (6.8%) consumed alcohol 2 or more times a day.

Regarding physical activity, 231 (26.6%) declared that they lead a sedentary life, 264 (30.3%) performed an average physical activity and 375 (43.1%) performed a high physical activity.

Regarding calories received through food, 230 (26.4%) stated that the level of calories received was low, 265 (30.5%) received an average level of calories and 375 (43.1%) received high levels of daily calories.

Regarding the daily amount of fats, 625 (71.8%) declared that they consumed foods with a low or average level of fats against 245 (28.9%) who consumed foods with a high level of fats (graph 5.18).

For the consumption of pastries, the subjects were asked how many slices of bread they consumed per day. 565 (64.9%) stated that they consumed 2-3 slices of bread per

day and 305 (35.1%) consumed 4 or more slices of bread per day.

For daily salt consumption, the subjects were asked if they used the salt shaker during meals. 589 (67.7) of them stated that they used salt in small/moderate amounts and did not use salt shakers during meals. 281 (32.3%) declared that they consumed a lot of salt and almost always used the salt shaker during meals.

Regarding the presence of a family history of HTA, 595 (68.4%) stated that they had no family history of HTA compared to 275 (31.6%) who had a family history of HTA. The prevalence of diabetes among subjects included in the study was 8% (70 individuals). Regarding other concomitant cardiovascular diseases/conditions (presence of angina, myocardial infarction, and IKK), it was found that 97 (11.2%) subjects had one or more CVS present. Of the subjects interviewed, only 42 individuals declared that they suffered from renal disease. Therefore, the prevalence of SR among the subjects included in the study was 4.8%. The average value of BMI in the population under study is 26.5 ± 3.6 kg/m2. In the analysis according to gender (male vs. female), BMI is 26.8 ± 3.4 kg/m2 and 26.3 ± 3.8 kg/m2, respectively. From our study, 205 (23.6%) of the interviewees were obese (BMI >30), and 665 (76.4%) were overweight or normal weight. In the analysis according to gender (male vs. female), the average values of waist circumference (WC) were 95.9 and 87.8 cm, respectively.

In subjects with HTA, 115 (56.4%) were male, and 89 (43.6%) were female. It was observed that the prevalence of hypertension increases with age. Thus, at the age of over 70 years, 41% of individuals were found to have HTA. The 18-29 age group has the lowest prevalence for HTA, (11%). This result is statistically very significant ($p<0.001$). Arterial hypertension increases with age and this increase is more pronounced in all cases for men. 46.2% of men and 35% of women aged over 70 were hypertensive. Approximate values of the frequency of encountering HTA are also found in the age group of 60-70 years, where 42.3% of men and 26.6% of women of this age group were found to be hypertensive. The age group with the lowest prevalence of HTA was 18-29 years old, 15.3% and 9.2% respectively. In the group of subjects with HTA, 193 (94.6%) individuals were white and 11 (5.4%) were black. In the group of subjects without HTA, 646 (97%) individuals were white and 20 (3%) were black. According to gender and ethnicity, among white men, 111 (27.3%) of them are hypertensive, while among black men, 4 (26.7%) of them are hypertensive. Of the white women, 82 (19%) of them are hypertensive, while of the black women, 7 (43.8%) of them are hypertensive. HTA occupies a higher percentage among subjects with an 8-year education level (26.6%) and secondary education (24.4%) than among those with a high education level (15.2%). 29% of men and 24% of women with a low level of education (0-8 years old) were diagnosed with HTA. While these values are decreasing with the increase in years of education. However, for all three levels of education, men have a higher frequency of encountering HTA. This result is statistically significant ($p=0.02$). According to the self-declared economic level, it was found that HTA is more frequent in subjects who declared an economic level lower than the Albanian average (32.5%), compared to the two highest economic levels: 26% and 19.7% respectively. So, in other words, HTA is less frequent, the higher the economic level. This result was statistically significant ($p=0.006$).

In the group of men who belong to single/divorced/widowed status, 21% of them are hypertensive, against 31% who belong to married status. In the group of women who belong to single/divorced/widow status, 22% of them are hypertensive, against 19% who belong to married status. Finally, we can say that in the group of men, married people have a higher prevalence of HTA, while in the group of women, the prevalence of HTA is higher among subjects who have a single/divorced/widowed status

Conclusion

- ### *The Prevalence of HTA in Durrës*

Our study revealed a prevalence of arterial hypertension of 23.4 %. According to gender, its prevalence was 27.3% for men and 19.9% for women. These figures are comparable to other studies conducted in Albania, such as the DHS study (2008-2009), which shows that the prevalence of HTA in Albania is 20% for women and 28% for men. Likewise, the prevalence of hypertension in the city of Durrës is comparable to the prevalence of hypertension in the city of Tirana (22.5%), according to a study conducted by Burazeri [2, 3] and INSTAT [5, 6]. If we were to compare our results with those of other European countries, we would notice that the prevalence of HTA in the city of Durrës is lower than that of Western European countries (England, Finland, Germany, etc.) [7-9]. This difference in prevalence could be attributed to several factors, such as the Mediterranean diet used in Albania, higher life expectancy in Western European countries, or other factors related to lifestyle, such as less alcohol consumption. Although efforts have been made to increase the number of people who are aware that they suffer from HTA, who are treated for its cure, or who have HTA under control, still their number is far from optimal levels. Our study showed that only 61.4% of the subjects who self-reported that they suffered from hypertension were currently being treated for its normalization. This result is lower than that of other European countries and may be related to the lower level of awareness of the Albanian population on the consequences of not treating HTA in time and correctly.

- ### *The Relationship of HTA with the Socio-Demographic Characteristics of the Population Studied*

Numerous epidemiological studies have shown that socio-demographic factors are important determinants in the development of HTA. There are many studies that show that the development of HTA is favored with increasing age, a finding confirmed by our study. Thus, it turned out that the age with the highest risk of suffering from HTA was over 45 years old. The trend was even increasing with increasing age. Such a conclusion also corresponds to other studies conducted in Albania, such as that of the DHS, or that conducted in Tirana [2, 3, 5, 6] which suggest that hypertension is a serious health problem among older age groups. large in Albania. Our study showed that the prevalence of HTA was higher in men (27.3%) compared to women (19.9%), while if we refer to the relationship between gender, age, and the appearance of HTA, we notice that HTA- it is more frequent in men for all age groups. This result does not agree with the majority of epidemiological studies on HTA, in which it results that for the age group over 55 years, HTA is more frequent in women. However, you should keep in mind that although women were less likely to develop HTA, this result was not statistically significant ($p>0.05$), which indicates that it should be interpreted with caution. Other studies should be conducted in Durrës and other cities in our country to confirm or refute this finding of our study.

- *The Relationship of HTA with the Lifestyle Factors of the Study Population*

One of the most interesting findings of our study was the strong association that existed between tobacco use and HTA. The indisputable role of tobacco in the occurrence of HTA is now recognized. Almost all epidemiological studies have pointed to this connection. In our study, it was found that 62.7% of hypertensives were smokers, which indicates the indisputable role of smoking in the development of HTA. On the other hand, regardless of gender, it turned out that HTA develops more in subjects who smoke, a result comparable to that of the DHS report. Regarding alcohol consumption and the development of HTA, the study found that individuals who consumed alcohol more than 2 times a day were more likely to develop HTA, although the result was not statistically significant. ($P = 0.167$). On the other hand, it turned out that in subjects who consumed it almost every day (in small doses), alcohol is a protective factor against the development of hypertension (OR=0.52, 95% CI= 0.30-0.91, P=0.022). this result should be interpreted carefully because it refers to small amounts of alcohol per day (50-100 ml) and the explanation is related to its protective role against CVD when the daily amount of alcohol is small. Observational and experimental studies have documented a direct dose-effect relationship between alcohol consumed and blood pressure, especially if alcohol consumption increases to more than two drinks per day. This association is independent of such confounding factors as age, obesity, and salt intake. Also, some studies have shown the protective effect against SKZ, when it is taken in moderate doses. The current consensus is that alcohol consumption should be limited to no more than two drinks per day/for men and no more than one drink per day/for women or a lightweight person. A drink is defined as a regular beer or a glass of wine (12% alcohol).

Physical activity is another lifestyle factor that did not result as a risk factor for HTA in our study. Although it is often reported in the literature that high physical activity affects the non-appearance of HTA, the association (connection) of HTA with physical activity is very complex. Thus, subjects with HTA may be more physically active than those without HTA simply as a result of medical advice. Therefore, in transversal (cross-sectional) studies, as is the case of our study, the interpretation of the relationship between physical activity and HTA should be done more carefully. The fact is that in our study there was no connection between physical activity and HTA. This result can be related to the above considerations, but perhaps also to the interviewees' misperception of high physical activity. High level of animal fats in the diet was found to be a strong risk factor for HTA. The study showed that individuals with hypertension used a lot of animal fats in their daily diet. Thus, the prevalence of HTA was higher in individuals who used a lot of fats (62.4%) compared to those who used little or moderate (37.6%). This result is comparable to many epidemiological studies in the world. The high amount of salt in the daily diet was found to be an important risk factor for HTA. This association was statistically robust and is comparable to many previous studies in the world. Significantly, the risk for CVD increases with increasing BP levels, starting from 115/75. It has been seen that factors such as intake of excessive amounts of salt, increased consumption of alcohol, and lack of physical activity contribute to the development of HTA. However, the overwhelming evidence shows that salt is the biggest contributing factor compared to other factors.

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REFERENCES

1. Spahija B, Qirjako G, Toçi E, Roshi E, Burazeri G. Socioeconomic and lifestyle determinants of obesity in a transitional southeast European population. Med Arch. 2012;66(3 Suppl 1):16-20.
2. Burazeri G, Goda A, Kark JD. Television viewing, leisure-time exercise and acute coronary syndrome in transitional Albania. Prev Med. 2008;47(1):112-5.
3. Burazeri G, Kark JD. Alcohol intake and its correlates in a transitional predominantly Muslim population in southeastern Europe. Addict Behav. 2010; 35(7):706-13.
4. Kalaja R, Krasniqi M. Patient satisfaction with quality of care in public hospitals in Albania. Front Public Health. 2022;10:925681. doi:10.3389/fpubh.2022.925681
5. Demographic and Health Survey. Institute of Statistics and Institute of Public Health. 2008-2009;1(2):17-24.
6. World Health Organization. International Society of Hypertension Writing Group. 2003 World Health Organization

(WHO)/International Society of Hypertension (ISH) statement on the management of hypertension. J Hypertens. 2003;21:1983-92.
7. Kearney PM, Whelton M, Reynolds K, Muntner P, Whelton PK, He J. Global burden of hypertension: analysis of worldwide data. Lancet. 2005;365(9455):217-23.
8. Ross H, Zaloshnja E, Levy DT, Tole D. Results from the Albanian Adult Tobacco Survey. Cent Eur J Public Health. 2008;16(4):182-8.
9. Fauci AS, Braunwald E, Kasper DL, Hauser SL, Longo DL, Jameson JL, et al. Harrison's principles of internal medicine. 17th edition. McGraw-Hill; 2008. p.2275.